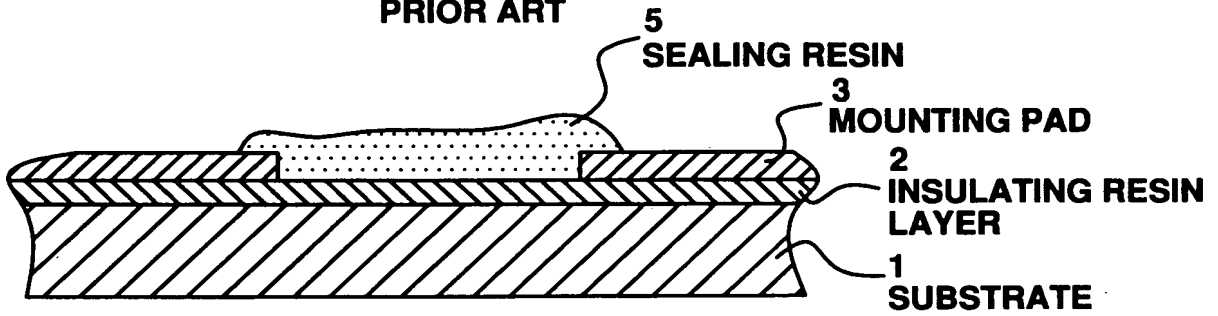


FIG. 1A

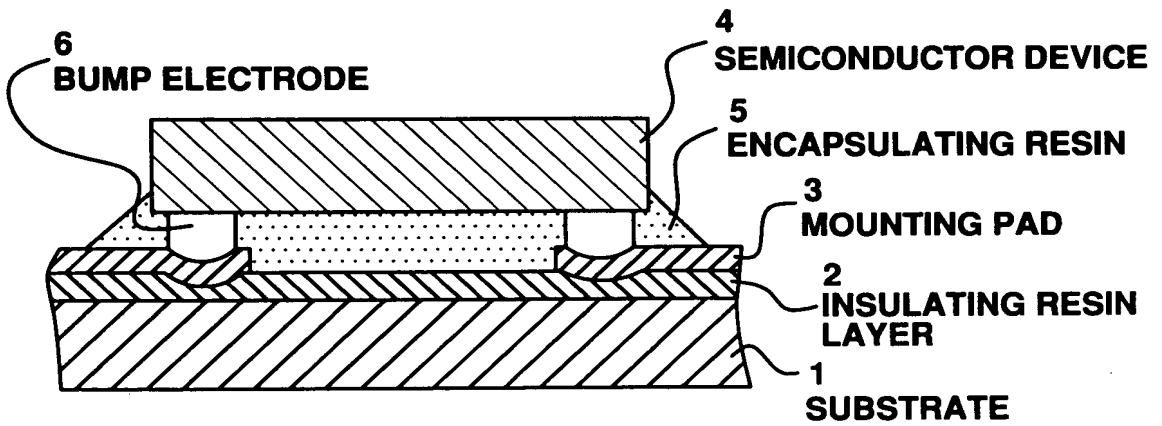
**FIG. 1A**

**PRIOR ART**



**FIG. 1B**

**PRIOR ART**



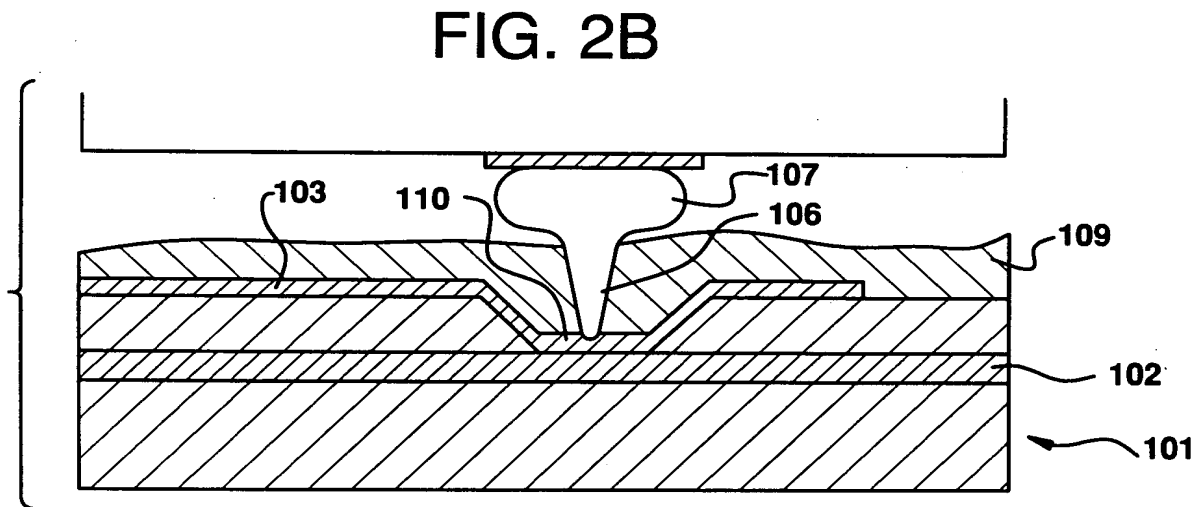
1. *Chlorophyll a* (Chl *a*) is the primary photosynthetic pigment in most plants and algae. It is a green pigment that absorbs light energy in the blue and red regions of the visible spectrum. Chl *a* is essential for the light-dependent reactions of photosynthesis, where it converts light energy into chemical energy.

2. *Chlorophyll b* (Chl *b*) is an accessory pigment found in green plants and algae. It absorbs light energy in the blue and orange-red regions of the visible spectrum. Chl *b* transfers the absorbed energy to Chl *a* for use in photosynthesis.

3. *Carotenoids* are a group of pigments that include carotenes and xanthophylls. They absorb light energy in the blue and green regions of the visible spectrum. Carotenoids transfer energy to Chl *a* and also play a role in protecting the photosynthetic apparatus from damage by excess light energy.

4. *Xanthophylls* are a subset of carotenoids that include pigments like lutein and zeaxanthin. They absorb light energy in the blue and green regions of the visible spectrum. Xanthophylls are involved in energy transfer to Chl *a* and also contribute to the photoprotection of the photosynthetic system.

5. *Anthocyanins* are water-soluble pigments that give plants red, purple, and blue colors. They are not directly involved in photosynthesis but can play a role in protecting plants from environmental stressors like UV radiation and herbivory.



A cross-sectional view of a semiconductor device. A substrate 101 is shown at the bottom. A layer 102 is formed on the substrate. A trench 103 is formed in the layer 102. A layer 105 is formed on the top surface of the substrate 101. A layer 107 is formed on the top surface of the trench 103. A layer 109 is formed on the side walls of the trench 103.

FIG. 3A

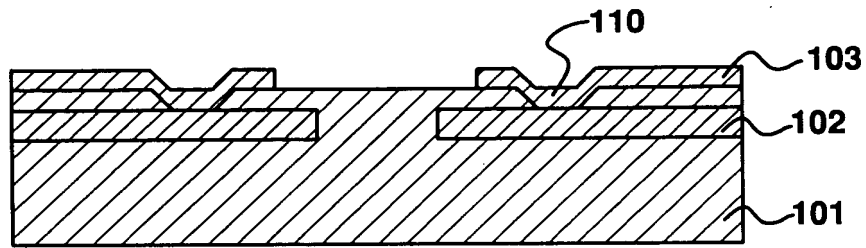


FIG. 3B

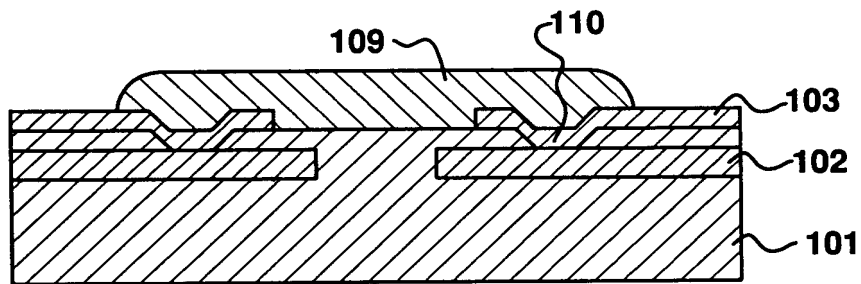


FIG. 3C

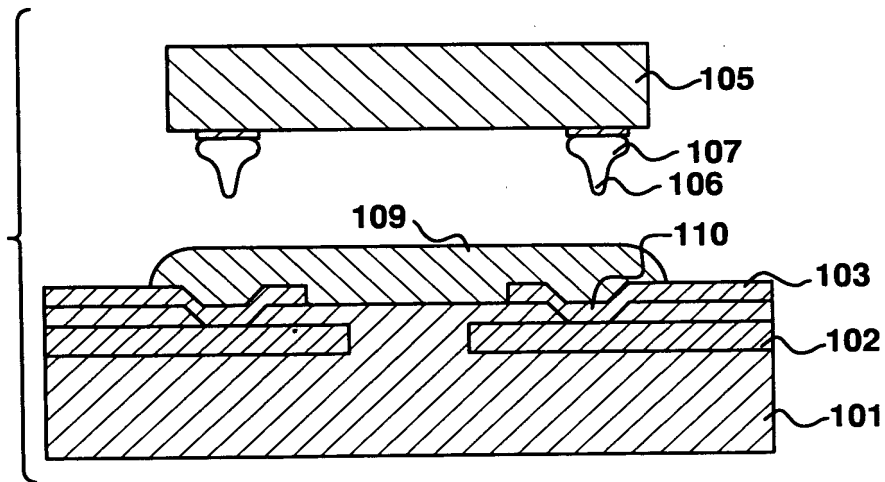


FIG. 3D

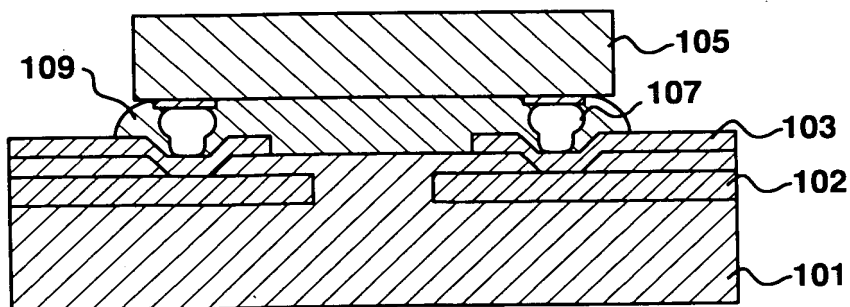


FIG. 4A

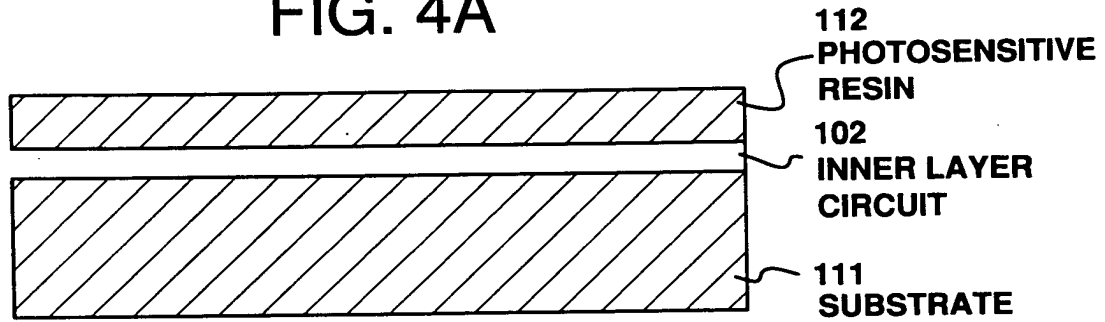


FIG. 4B

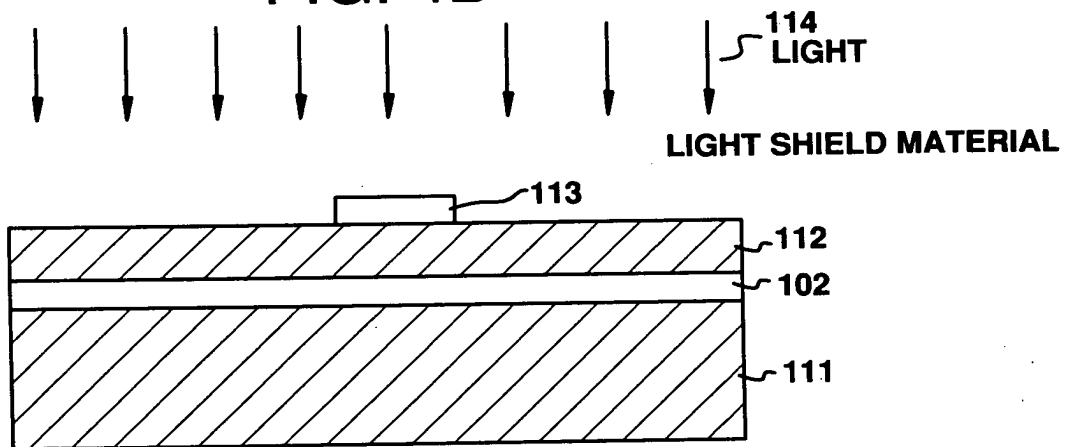


FIG. 4C

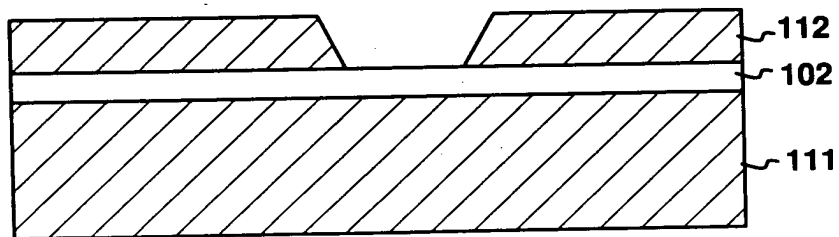


FIG. 4D

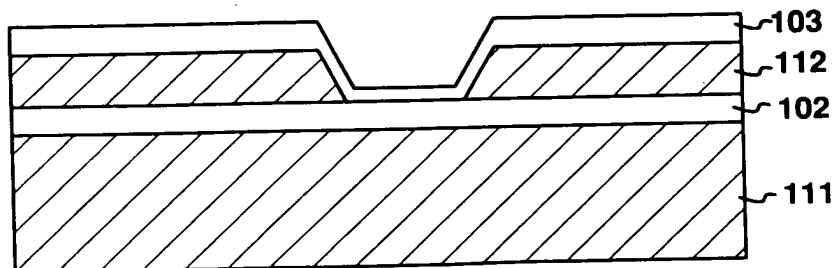


FIG. 5A

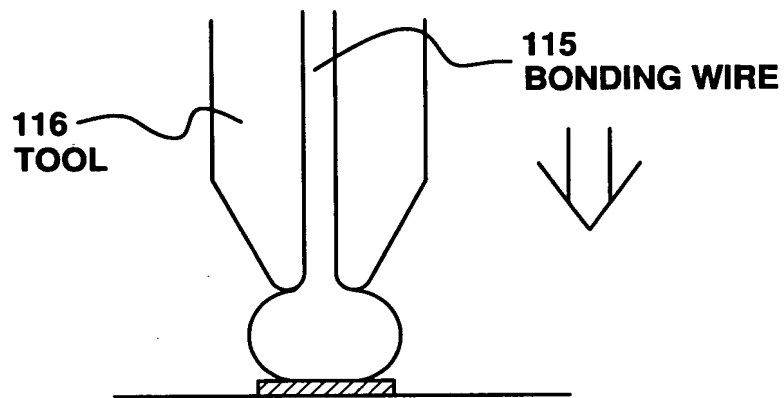


FIG. 5B

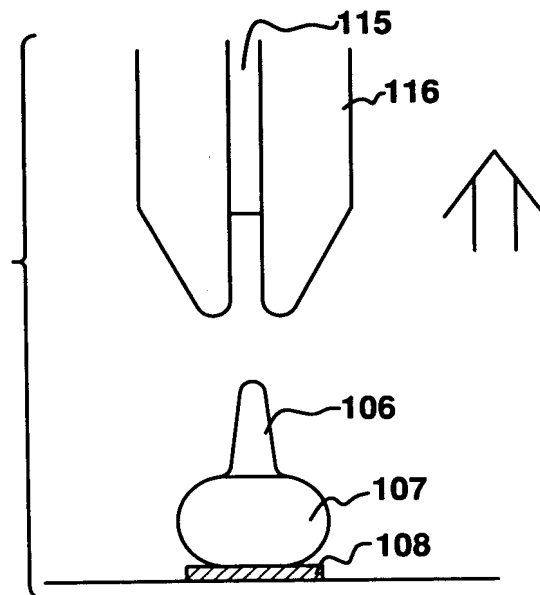
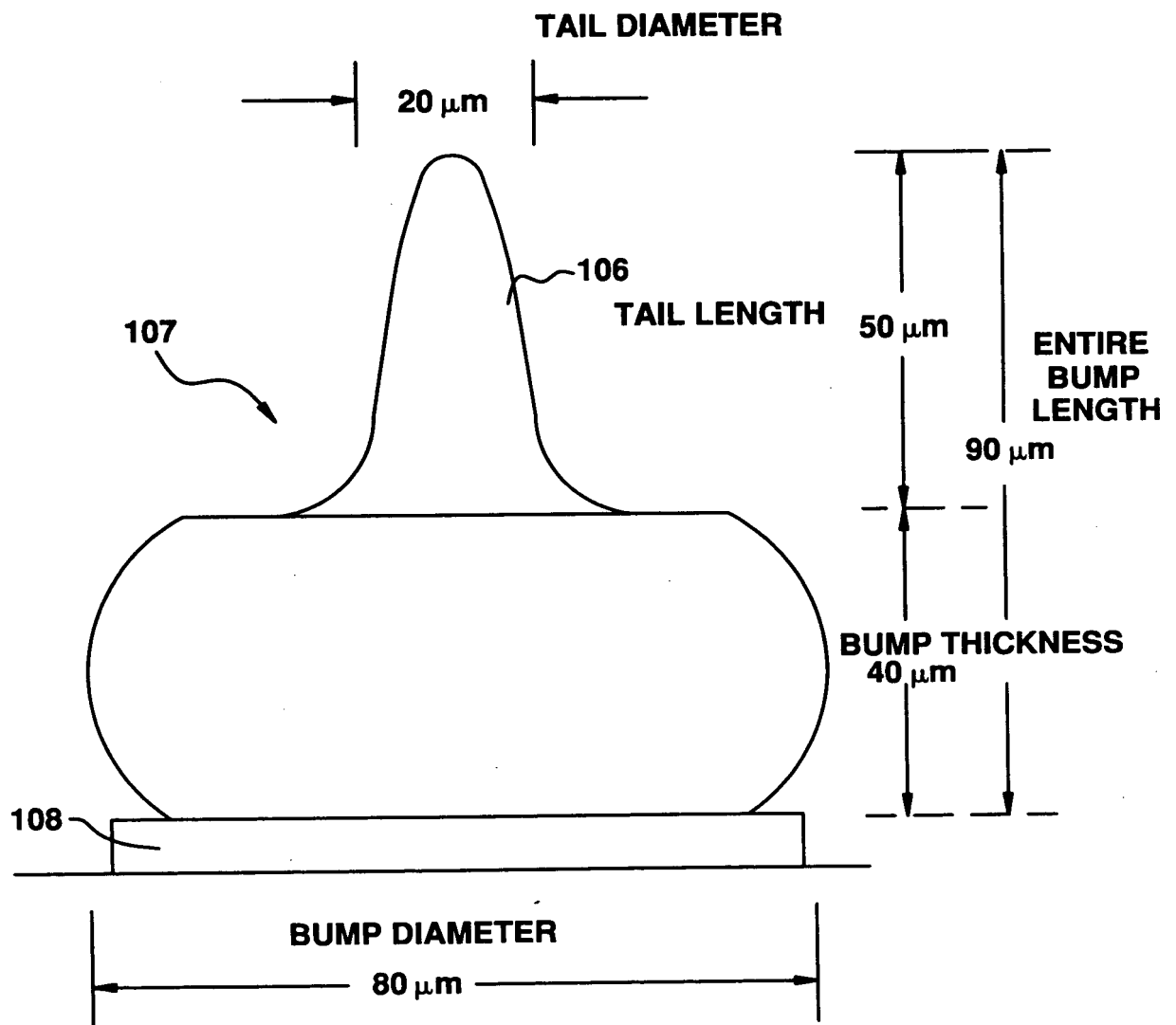


FIG. 6



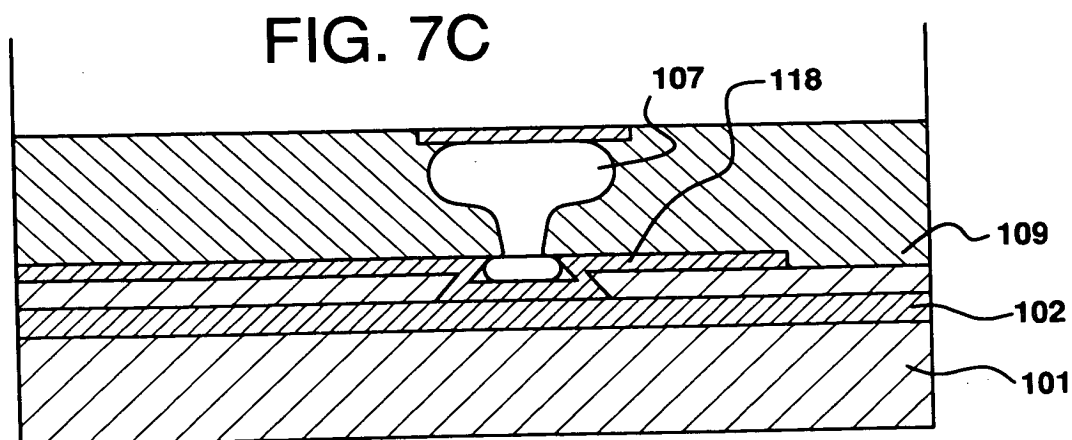
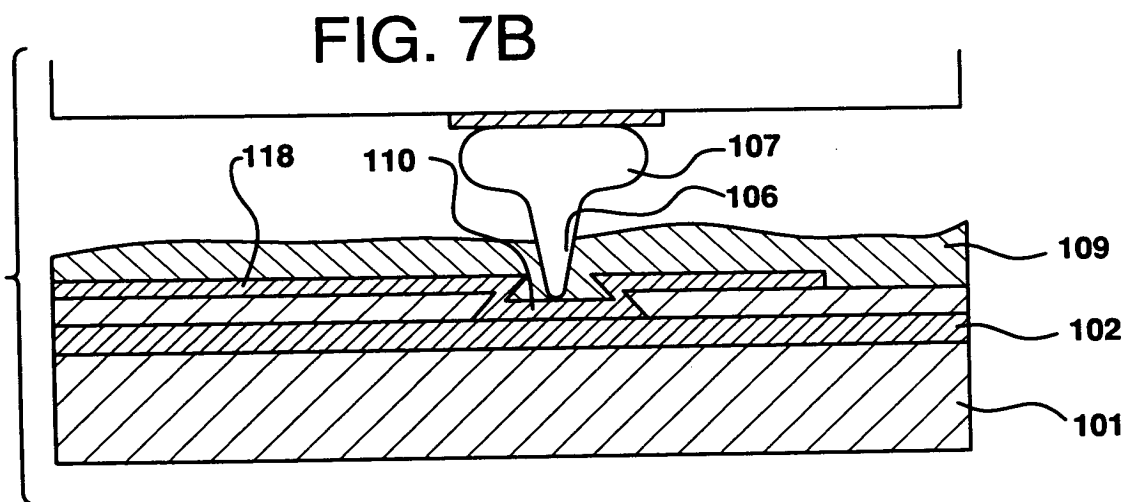
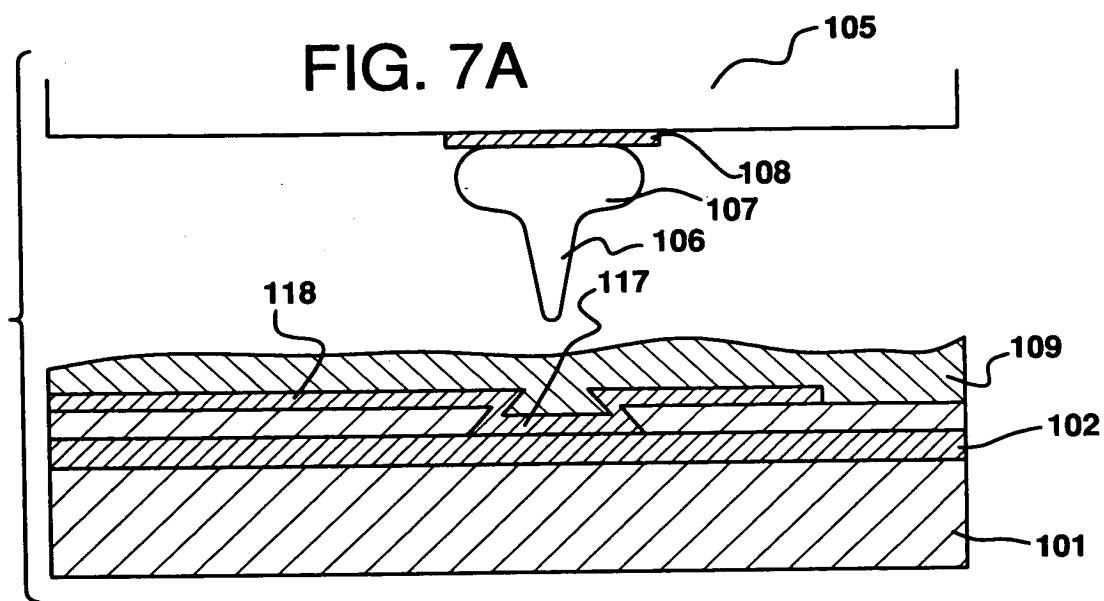


FIG. 8A

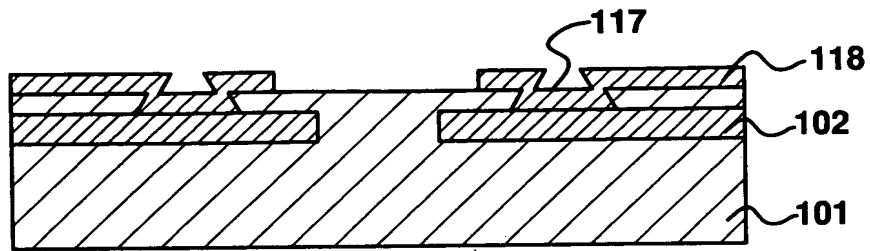


FIG. 8B

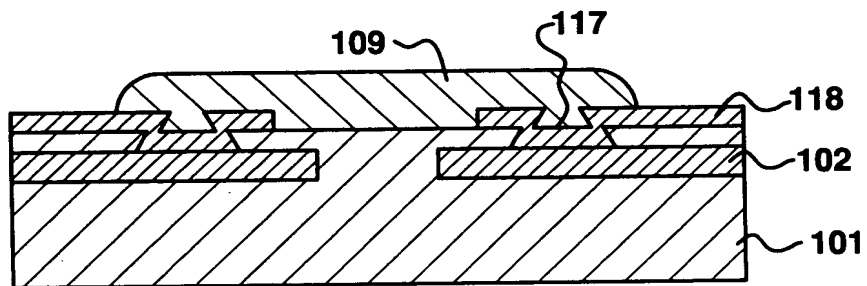


FIG. 8C

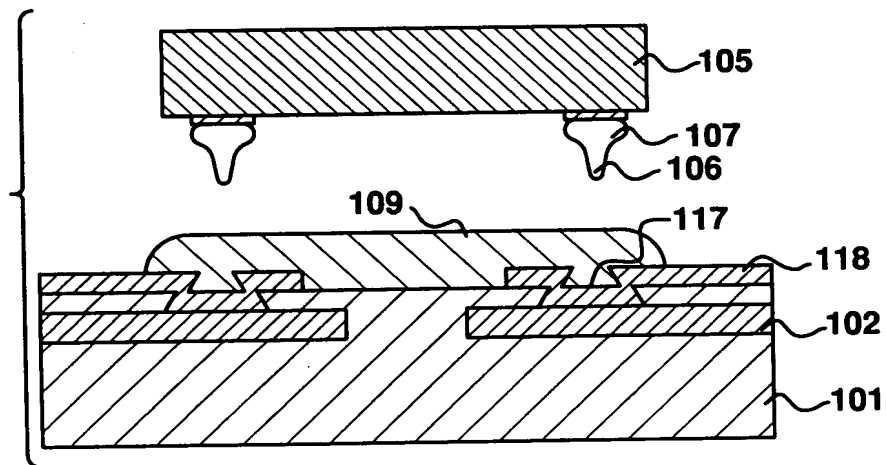


FIG. 8D

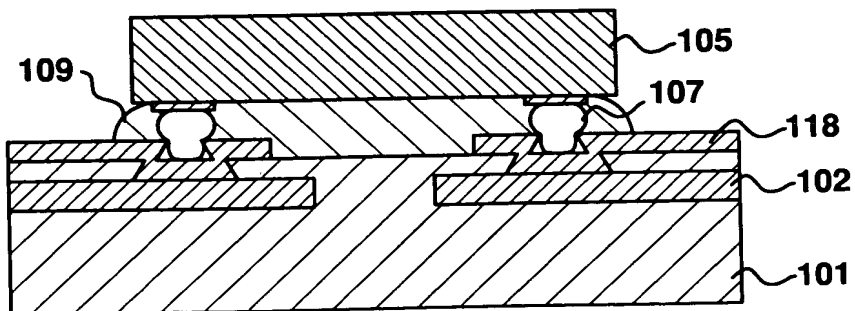




FIG. 9A

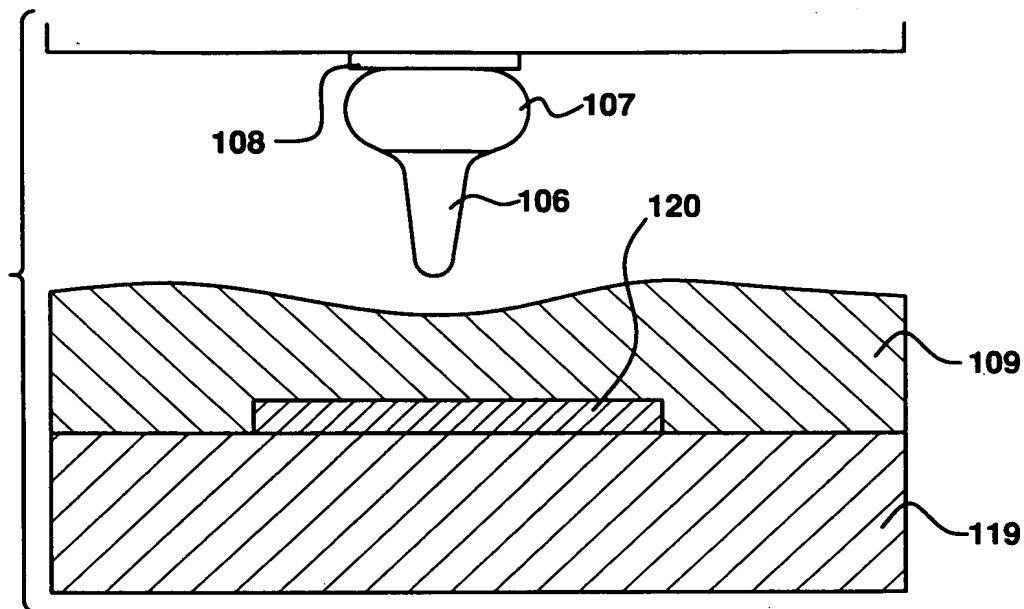


FIG. 9B

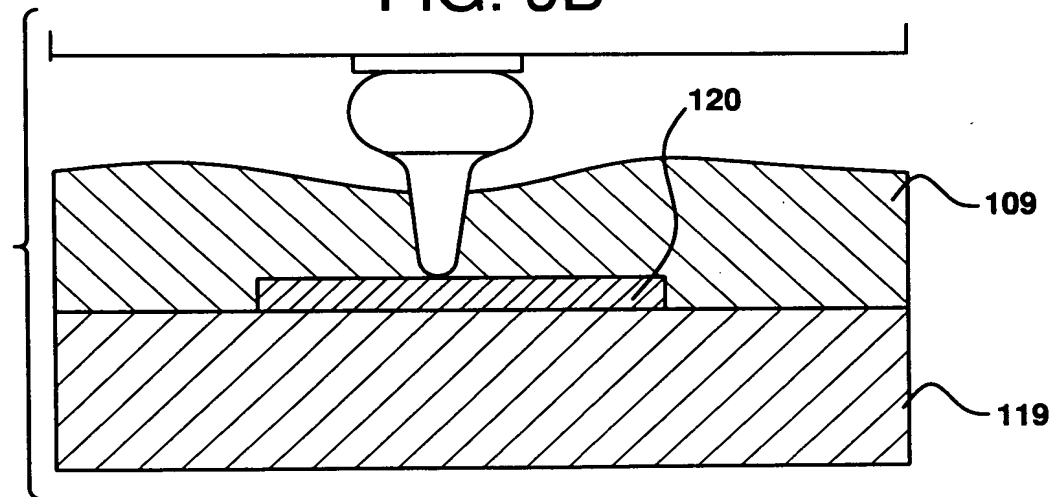


FIG. 9C

